CLAIMS

What is claimed is:

1. A visually significant barcode system com prising:
an encoding module for receiving a message and a logo and based thereon for generating a visually significant barcode having the message encoded therein.

2. The visually significant barcode system of claim 1 further comprising:
a print engine co upled to the encoding module for receiving the visually significant barcode and based thereon for rendering a hard copy of the visually significant barcode.

3. The visually significant barcode system of claim 2 wherein the
print engine utilizes a halfton e algorithm to render the hard copy of the visually significant barcode.

4. The visually significant barcode system of claim 1 further comprising:
a decoding module for receiving an acquired version of the visually significant barcode and based thereon for recovering a message encoded therein.

5. The visually significant barcode system of claim 4 further comprising:
an acquisition engine coupled to the decoding module for receiving a hard copy having a visually significant barcode, and based thereon, fo r generating the acquired version of the visually significant barcode.

6. The barcode system of claim 4 wherein the encoding module and the decoding module are embodied on a media.

7. The barcode system of claim 6 wherein the media is incorporated in a n office machine in the form of a memory.

8. The barcode system of claim 7 wherein the office machine is one of a personal computer, an all-in-one office machine, a printer, and a scanner.

9. The barcode system of claim 6 wherein the media is a compute r readable medium.

10. The barcode system of claim 9 wherein the computer readable medium is one of a floppy disk and a compact disc.

11. The barcode system of claim 1 wherein the message is one of an electronic mail address, a uniform resource locator web address, authentication information, a facsimile number, and a file name and location.

12. The barcode system of claim 1 wherein the logo includes a user input feature for allowing a user to provide information.

13. The barcode system of claim 12 wherein the user input feature is one of a circle selection form, check box form, and fill -in form.

14. The barcode system of claim 1 wherein the visually significant barcode is utilized in one of an automatic fax -back application, an automatic email -back application, copy from electronic version application, and a most -recent document application.

15. A method for generating a visually significant barcode comprising:

receiving an $M \times N$ pixel image;

receiving a message having a plurality of fields;

partitioning the $M \times N$ pixel image into a plurality of $K \times K$ image matrices; and

converting the $K \times K$ image matrices to $K \times K$ barcode matrices by utilizing one of a predetermined set of L distinct maps; wherein the selection of the particular map is based on a corresponding field of the message.

16. The method as in claim 15 wherein the pixel image is one of a black and white image, a color image, and a gray -level image.

17. The method as in claim 15 wherein the barcode matrices are multi -level barcode mat rices that includes one of gray level barcode matrices and color barcode matrices.

18. The method as in claim 15 further comprising:
defining an image area for predetermined fiducial marks.

19. The method as in claim 15 wherein the predetermined set of L distinct maps includes a predetermined set of halftoning algorithms that can be one of cluster dithering, disperse dithering, and error diffusion.

20. A method for decoding a visually significant barcode comprising:
receiving the barcode image;
partitioning the barcode image into a plurality of sub -images;
comparing each sub-image with a set of L possible barcode matrices; and
decoding a message based on a match estimation of each sub -image to each one of the L possible barcode matrices in a sequence of P symbols over $\{1, 2, \ldots L\}$.

21. The method as in claim 20 further comprising:
receiving an image having a barcode image; and
locating the barcode image in the received image.

22. The method as in claim 20 further comprising:

detecting at least one fiducial mark in the barcode image; and

using the fiducial mark to correct distortions in the barcode image.